

# SECTION C

TOUCHDOWN MODEL PENS

TO IDENTIFY THE TOUCHDOWN MODEL PENS: UNSCREW PLUNGER KNOB. PULL PLUNGER OUT. THE LARGE PLUNGER TUBE IS POSITIVE IDENTIFICATION.

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- |  |  |
|--|--|
| #1 Remove Point Unit -----   | Place point in 120 degree water for 10 seconds to soften sealing compound. Place thumb on feed and forefinger on point and unscrew, keeping feed and point in line. If regular style point remove point and feed from barrel end as on page C2A. |
| #2 Remove Gripping Section, Protector Tube and Sac From Barrel ----- | Use Rubber<br>Place rubber on Gripping Section and unscrew.  |
| #3 Remove Protector Tube and Sac From Gripping Section -----         | Grip Section tightly in one hand. With other hand grip protector tube near large end and rock off. Do not twist. Sac can now be removed.   |
| #4 Remove Plunger Tube -----   | Small long shank screw Driver. Unscrew barrel cap. Place screw driver in barrel and through plunger tube until it contacts screw in Plunger Knob. Unscrew barrel cap. Plunger tube can now be removed from barrel.                               |
| #5 Remove Compression Gasket -----                                   | Use Dull Pin or bend & file a small hook in paper clip. Place point of dull pin gently behind Gasket and gently remove.  |

After dismantling the pen, all parts should be thoroughly cleaned and inspected and all worn, broken, or wrong parts should be replaced.

ASSEMBLE

- |                                     |   |
|-------------------------------------|---|
| #1 Replace Compression Gasket ----- | Compression Gasket Positioning tool. See Page D3. |
|-------------------------------------|---|

- #2 Replace Plunger Tube ----- Small long shank screwdriver.  
Place screw on screwdriver.  
Place Plunger Tube Gasket on screw  
and insert into plunger tube,  
insert plunger tube into barrel,  
place shake-proof washer on  
screw and screw plunger knob on  
firmly. A drop or two of #30  
motor oil can be placed on the  
plunger tube to make it work more  
smoothly. WARNING!!  
DO NOT USE CASTOR OIL!!!
- #3 Replace Sac on Gripping ----- Use Sac Spreader and Shellac.  
Section. Be sure and use  
proper sac Use shellac freely on Gripping  
Section as this type pen requires  
a tighter seal than other types.  
Allow to dry a few seconds before  
applying sac. Place proper sac  
on spreader. Insert Gripping  
Section into spread lip of sac.  
Hold sac in place with forefinger.  
Remove sac spreader. Straighten  
sac.
- #4 Replace Protector Tube ----- Immediately place protector tube  
over Sac. Push on Gripping Section  
until tube touches threaded shoulder  
on Gripping Section.
- #5 Replace Gripping Section, Sac ----- Screw Gripping Section into barrel.  
and Protector Tube Use a small amount of warm point  
sealing compound on threads.
- #6 Replace and seal Point Unit ----- Use rubber and sealing compound.  
Start point unit into barrel end  
and spread warm sealing compound  
evenly over exposed threads. Grip  
feed and point firmly with thumb  
on feed and forefinger on point  
and tighten firmly. Clean off  
excess sealing compound with  
gasoline.

NOTE: If any point or triumph point unit repair is needed, refer to pages  
C5 - C8.

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- #1 Remove Section Feed and Nib from Barrel. ----- Use padded mouth section pliers. Place pliers around section and unscrew.
- #2 Remove Feed and Nib from Section ----- Use bench block, feed punch, and hammer. Place nib and feed into proper hole in block, and place punch over insert of feed and drive out with hammer.

ASSEMBLE

- #1 Push Feed and Nib into Section ----- Use nib pushing pliers, pushing gauge, nib gauge chart, and hammer. Place nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive section over nib and feed.
- #2 Replace the Assembled Section, feed, and nib, in barrel. ----- Use padded mouth section pliers. Start section into barrel, making sure plunger is retracted, and tighten with pliers.

NOTE--These are instructions taken from Page 45 of the old repair manual.

INSTRUCTIONS FOR DISMANTLING THE SNORKEL PEN

1. Extend plunger tube and unscrew the Gripping Section which removes the entire writing unit.
2. Remove the sac protector tube assembly by pulling it out of the Gripping Section assembly.
3. Unscrew the point unit from the Gripping Section.
4. Remove the point holder gasket from the point end of the Gripping Section.
5. Remove propelling spring by turning barrel on end and pumping plunger tube.
6. Grasp filler tube near sac protector bushing rocking back and forth gently and at the same time pulling out.  
CAUTION - Be certain to handle the filler tube with extreme care as damage to this part will cause malfunction of the pen.
7. With long shank screwdriver, remove plunger tube by turning screw which holds the plunger knob on the threaded plunger tube. Gasket seated atop plunger tube may or may not come out.
8. Remove compression gasket ("O" ring).

INSTRUCTIONS FOR ASSEMBLING SNORKEL PEN

1. Replace compression gasket ("O" Ring).
2. Replace threaded plunger tube in barrel. If necessary to replace gasket, place it atop plunger tube. Then put screw on long shank screwdriver, inserting into and through the plunger tube and tightening into plunger knob.
3. Enlarge the end coil of the propelling spring and place the spring, enlarged coil first, around the threaded plunger tube in the barrel.
4. Place the end of the sac protector assembly containing the rubber bushing into water at least 180° F so that the water completely covers the four splines. Hold the assembly in this position for approximately two minutes to allow the rubber bushing to be heated, then remove and insert the filler tube into the sac protector assembly bushing. Dry the assembly thoroughly with a cloth.
5. Seat point holder gasket in point end of Gripping Section.
6. Screw nib unit into Gripping Section. Sealing compound is not needed as the point holder gasket completes the seal.
7. Lubricate the filler tube with Glycerine (#94) and insert through the hole in the point holder gasket. Make sure the sac protector tube assembly is assembled with the large groove (present on the older models only) lined up correctly with the large groove slot in the gripping section. It is very important that the protector tube be properly fitted in the gripping section and moves back and forth easily requiring very little force.
8. Place a small amount of shellac (#71) on threads of gripping section and screw the writing unit into the end of the barrel with the plunger extended.
9. Depress the plunger and retract filler tube by turning to the right.

Check the position of the filler tube as follows:

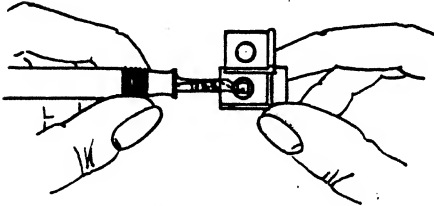
- (A) The filler tube should be turned so that its slope meets the slope of the feed (Triumph point). The fissure of the filler tube should line up with the fissure in the feed. If it does not align correctly, extend the filler tube and realign.
- (B) The slope of the filler tube should be flush with the contour of the feed; neither extended nor recessed. If it is not flush, remove the barrel and adjust the filler tube length. Do this by twisting tube sideways to loosen and then pull or push.

PROCEDURE FOR SHEAFFER PEN REPAIR

On all Sheaffer nibs and Triumph nib units the following are the operations, tools, and methods used in spacing, aligning, smoothing the nib and fitting the feed.

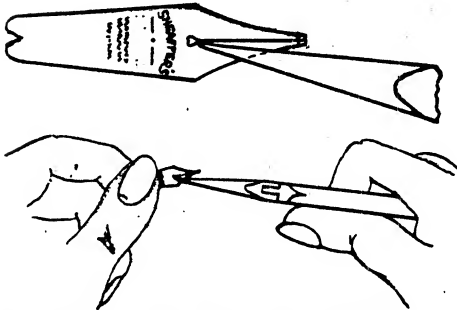
OPERATIONS

#1 Inspect Nib



#2 Properly Space Nib

(The degree of fineness is the key to the amount of space the nib should have. The finer the nib, the narrower the spacing.)



Correct position of pliers for adjusting nib.



Incorrect positions of pliers for adjusting nib.

TOOLS AND METHODS

-----  
Use magnifying glass.

Place nib against bottom of glass so that it shows through the opening. Examine the iridium, determine the degree of fineness.

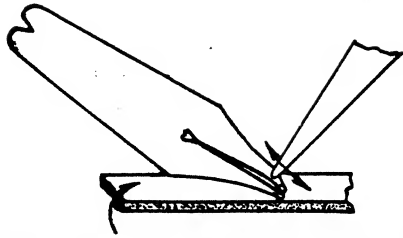
See illustration at left.

-----  
Use nib pliers.

Points should always be spaced far enough apart so light can be seen through entire length of the slit. Points that do not have enough space are adjusted by raising first one side, then the other, away from the feed or writing surface. Grasp the nib with the nib pliers and lift or spring up alternate sides. Do not make an abrupt bend in the nib. If the nib is spaced too much, reverse the process and spring sides down.

CAUTION: Keep the plier jaws away from the iridium tips or iridium will be broken off. When the adjustment is completed, the iridium tips must be exactly even on the writing surface.

#3 Aligning nib



Burnishing nib which is closed at tip.



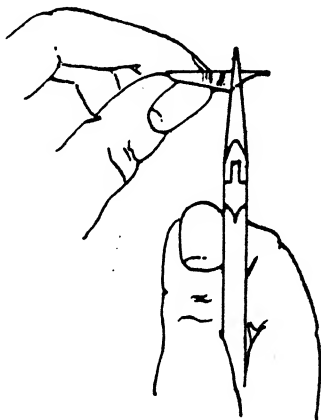
Nib correctly spaced.



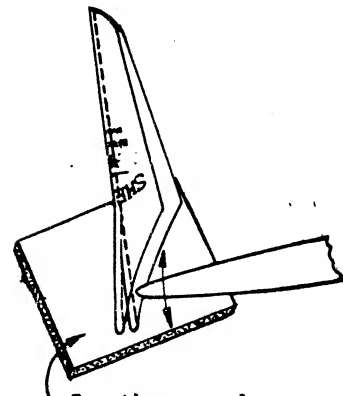
Incorrect. Nib is open on the face.



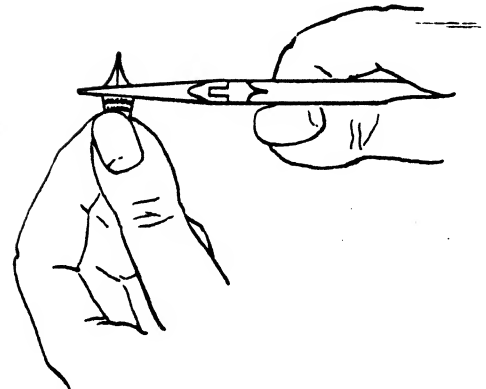
Incorrect Back



Closing nib that is open on the face.



Leather pad.  
Burnishing nib which is forked at the center of slit.



Closing nib that is open on the back.

-----  
Use nib pliers and regular burnisher. Nibs should be straightened and spacing adjusted before pen is re-assembled. Nibs which are bent in at the tip can be adjusted by burnishing the outside of the nib where the bend occurs while the iridium tip is resting on a leather pad. Nibs which are forked at the tip are treated as above except that the uppermost side is pushed away with tip of burnisher while burnishing inside of lower nib. Nibs must be spaced the same width on the face as on the back. Nibs open too wide on the face can be adjusted by springing the shoulders of point together slightly. Nibs which open wider on the back than on the face are adjusted by pressing the nib lightly across the heart with the pliers.



#### #4 Fit Feed to Nib

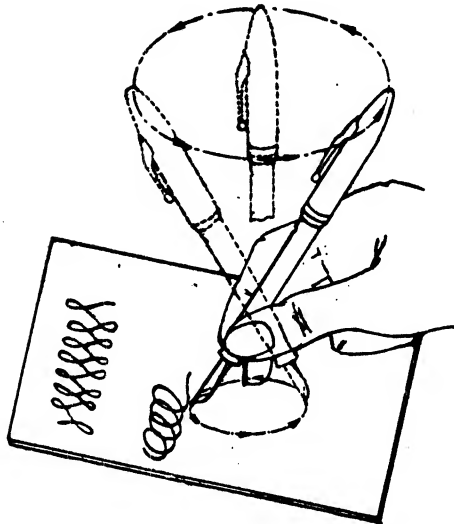
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Use Alcohol lamp.

After nib and feed are pushed into section or nib unit replaced in barrel, the feed is then ready to be fit to the nib. The old style flat feed must fit tightly all along the under side of nib to insure a correct flow. The feed is made of hard rubber. By quickly passing it through a flame a number of times, the rubber absorbs heat and becomes pliable. The feed, when pliable, is molded against the nib by pressing it with forefinger. When feed has been molded to nib, dip it in water. This cools feed causing it to retain its molded form. Use care to keep the section and barrel from heat as it is extremely inflammable. The new style streamlined or "C" feed is pushed and fit in the same manner as the regular flat comb feed. This type feed requires heat and pressure only at the tip ends of feed beyond combs, as do the feeds in the Triumph nib units. Take the magnifying glass and look through the heart pierce of point. Inspect narrow ink channel in feed. After fitting feed against nib, inspect the ink slot again to see that the slot has not been closed. Closing very slightly will do no harm, but if it is closed more than half way, the section should be removed and feed and nib driven out. The ink slot then may be opened by heating feed, after which it may again be assembled.

## #5 Smooth Nib

**CAUTION:** Do not smooth nibs unless they need it. Tips must be even on writing surface before smoothing.



-----  
Use 4/0 smoothing paper and jewelers rouge.

If tips are even and nib scratches, the iridium may have a sharp or rough spot. This is removed on a special grade of fine smoothing paper. This paper should be placed on a firm smooth surface and a light coat of rouge rubbed over it to reduce the cutting power and to polish the iridium. To smooth nib, hold pen in a writing position and slowly move it in small circles. Finish up by writing continuous figure 8's. As the nib is moved over the paper, the position of pen should be changed continuously so a flat face will not be worn on nib tip. Use only moderate pressure and finger movement in making small circles and figure 8's. Care and skill must be exercised or more harm than good will be done. Never rub the nib on a stone or rough abrasive of any kind. The iridium must have a very smooth, mirror-like finish and any scratch or rough spot will be noticed when nib is used.

See illustration opposite.

**\*\*PROCEDURE FOR REPAIR OF SHEAFFER POSTWAR PLASTIC CAPS WITH METAL THREAD SLEEVES\*\***

**DISMANTLE**

**OPERATION IN SEQUENCE**

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**TOOLS AND METHODS USED**

#1 Break Band Off Cap

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Cutting pliers.  
Grip one side of band with cutting pliers and bend cap down until band breaks off, being careful not to damage the plastic.

#2 Pick Sleeve Out of Cap

-----

Regular burnisher and needle nose pliers.  
Pick or push sleeve toward center of cap with burnisher until needle nose pliers can be inserted between sleeve and plastic cap. Again being careful not to damage plastic. Grip sleeve with pliers and twist out.

Caution: Use only ARABOL CEMENT FOR CEMENTING SLEEVES IN CAP.

**REASSEMBLE**

Select proper sleeve and band.

#1 Cement Sleeve and Band in Cap

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Arabol cement.  
Spread plenty of Arabol cement evenly on thread sleeve. Push into cap as far as possible.

#2 Wipe Excess Cement off Cap

-----

With a rag moistened in water wipe until all cement is removed from cap.

**NOTE:** These caps should be allowed to dry at least 12 hours after cementing.

**\*\* PROCEDURE FOR REPAIR OF SHEAFFER METAL CAPS WITH METAL THREAD SLEEVES \*\***

**DISMANTLE**

**OPERATIONS IN SEQUENCE**

**TOOLS AND METHODS USED**

#1 Remove Thread Sleeve -----

Thin sharp pointed tool.  
Needle nose pliers. Check depth of sleeve. Insert sharp pointed tool between cap and thread sleeve and push or bend one side of thread sleeve to center of cap. Needle nose pliers can now be inserted between cap and sleeve. Grasp sleeve firmly and twist out.

#2 Check Clip Spring -----

#3 Remove Dents -----

Metal Cap Burnisher.  
With burnisher rub dent from inside.

**REASSEMBLE**

#1 Select Proper Thread Sleeve -----

#2 Cement Sleeve into Cap -----

EC847 Cement  
Alcohol Lamp  
Spread cement evenly over thread sleeve. Insert in cap to the proper depth. Wipe excess cement off cap with rag moistened with carbon tetrachloride. Hold open end of cap in flame of alcohol lamp and heat to approximately 350°. Any more heat will cause the plastic clip sleeve to burn.

## SHEATH POINT CARTRIDGE PENS

### REPAIR INSTRUCTIONS

#### DISMANTLE:

1. Remove Point unit from barrel and pull off the plastic Skrip Cartridge.
2. Place entire Point and finger grip assembly in 120 degree water for 20 seconds. Shield the threads of thread bushing with a strip of rubber or flexible plastic inner cap (such as the one in the cap of this pen) and grip it in a Point Holder Pliers (Tool #32) and unscrew using a rubber pad to hold and turn gripping section.
3. Push feed back thru gripping section by pushing on feed finger. Be sure to watch for small compression gasket which is between feed and threaded bushing.
4. Unscrew point from finger grip.
5. Pull pierce tube from threaded bushing by gripping tube with a Filler tube alignment plier (Tool #23). Feed insert can be removed with the fingers.

#### ASSEMBLE:

1. Screw point on finger grip making sure it is tightly seated.
2. Push feed up through finger grip. The finger of the feed should be centered on the nib. This can be done by inserting the tip of a pencil in the hole on the bottom of the feed to hold the feed while assembling through the finger grip.
3. Place the compression gasket into the finger grip.
4. Make sure the friction ring is in place on the threaded bushing. Place a small amount of thread seal (#64 - 64A) on the small threads and assemble into gripping section.
5. If the pierce tube has been disassembled place it on the pierce tube assembly tool (#89). Place the correct spacer washer for the sheath type pens in place and push the pierce tube into the bushing until the spacer is against the bushing. The long side of the pierce tube should line up with the slit on the point.
6. Place the feed insert into the pierce tube with the flat side up (toward the point) and push through the assembled pierce tube. The insert must be pushed so that the end is shorter than the long edge of the angle on the pierce tube, but longer than the short edge.
7. Always test the writing and feeding by assembling a Skrip Cartridge on the completed assembly.

Any part or parts of the writing assembly can be cleaned or replaced by using the above sequence either in it's entirety or as required.

TO TIGHTEN CLIPS OR REMOVE DENTS ON CARTRIDGE PENS

1. Remove the plastic cap innerliner with a hooked inner cap puller (Tool #6) or a solid hook bar puller (Tool #1A).
2. Insert an Arbor for removing dents in Metal caps (Tool #26F) into the cap shell and position it under the ears of the clip or under the dent to be removed.
3. Tap gently on the clip over the clip ears with a plastic hammer (Tool #75) to reclinch the clip ears until the clip is tight. This same tool is used to remove dents by gently tapping about the dented area.
4. Re-push the plastic cap inner lever into the cap shell using a #2 size plastic pencil cap to force the innerliner to the end of the cap shell.

TO CLEAN CARTRIDGE PEN NIB UNITS

1. Remove the unit from the barrel and pull off the plastic Skrip Cartridge.
2. Insert the unit point first into a rubber bulb (Tool #59). The Sheath type will fit tightly in the mouth of the bulb but the Conventional type must be held with the head of the gripping section against the mouth of the bulb.
3. Insert the pierce tube into hot water and flex the bulb. This will force the water in and out of the unit and flush any sediment out of the feed and pierce tube insert.

## CONVENTIONAL POINT CARTRIDGE PEN

### REPAIR INSTRUCTIONS

#### DISMANTLE:

1. Remove point unit from barrel and pull off the plastic Skrip Cartridge.
2. Remove pierce tube with a Filling tube alignment pliers (Tool #23). Remove insert.
3. Remove point and feed from gripping section. This can generally be done with a Point pushing pliers and attachment (Tool #14). Be sure the jaw opposite the attachment is shielded with a rubber sac to prevent scarring the point. If the point and feed are too tight to be removed with pliers, position the unit point down in a Bench block for disassembling points and feeds (Tool #56) and insert a plunger rod through the hole in the gripping section and tap gently on the rod with a Bench hammer (Tool #58) until the feed and point are out of the gripping section.

#### ASSEMBLE:

1. Position the feed and point so the tip of the feed is approximately 1/8" from the tip of the point. Grip with a Point pushing pliers and attachment (Tool #14) (be sure the jaw away from the attachment is shielded with a rubber sac to keep from scarring the point) and push until the feed bottoms in the gripping section.
2. Place pierce tube on Pierce tube assembly tool (#89). Place the correct spacer washer for conventional point cartridge pens in place and push the pierce tube into the gripping section until the spacer is against the shoulder on the gripping section. The long side of the pierce tube should line up with the slit on the point.
3. Place the feed insert into the pierce tube with flat side up (toward the point) and push through the assembled pierce tube. The insert must be pushed so that the end is shorter than the long edge of the angle on the pierce tube, but longer than the short edge.
4. Always test the writing and feeding by assembling a Skrip Cartridge on the completed assembly.

Any part or parts of the writing unit can be cleaned or replaced by using the above sequence either in its entirety or as required. Complete writing units are also available.

ALL METAL RETRACTABLE BALLPOINT PENS

REPAIR INSTRUCTIONS

The slide collar mechanism in the all metal retractable ballpoint pens can be changed using the method described on page D8 of the repair manual except the reseating of the mechanism should always be done by hand as described in paragraph three of that page. The top of the cap is too "soft" to use the block.

Also the pushing tools sold prior to July 1957 must be slightly modified to be used with the all metal model. The outer diameter of the tool at the mouth is too large for the inner liner of the cap so that it cannot be inserted far enough to seat the mechanisms completely. The diameter of .262 must be reduced to approximately .250 at the edge of the mouth and tapered back gently.

This can be done by inserting the tool in a lathe and cutting it down with a file and smoothing the surface with sandpaper. Trying the size with a cap several times during the process will prevent removing too much material and ruining the tool.

The Service Department at the factory will turn down the tools for any repair station that does not have the proper facilities to do the job. This service will be provided at no charge. Simply return the tool in your next parts shipment and it will be modified and returned to you.

Tools sold after July 1957 can be used on all retractable models.



## LADY SHEAFFER SKRIPSERT PENS

### REPAIR INSTRUCTIONS

Point replacements on Lady Sheaffer Pens are made by using the same methods described on Page C11 for the Sheath Point Skripsert Pens. In both Lady Sheaffer and Sheath Point Skripsert Pens, applying a small amount of Arabol (#68 - 68A) on the threads under the point will help seal the point. Also, if the point appears to be spread after assembling, the feed should be heated so it will relax allowing the point to seek it's natural set.

The Point units can be cleaned without disassembling as described on Page C12.

### TO REMOVE DENTS FROM CAPS OR BARRELS

1. Remove the plastic or barrel innerliner using a Threaded Puller for Inner Liners. (Tool #91)
  - (a) Thread the Puller into the plastic liner until it has a firm grip.
  - (b) Apply a small amount of heat to the outside of the barrel or cap.
  - (c) Grip the cap or barrel in a rubber pad and pull out the liner.
  - (d) The cap shell or barrel shell can be cleaned with mineral spirits or gasoline if the rubber or heat marks it.
2. Insert an arbor for removing dents in metal caps (Tool #2 6F) into the cap or an arbor for removing dents in metal barrels (Tool #92) into the barrel.
3. Position the arbor under the dent to be removed and tap about the dented area with a plastic hammer (Tool #75).
4. Apply a bead of EC524 Name Plate cement (#93) three fourths of the way around the cap innersleeve and push it into the cap shell with a #2 size plastic pencil cap until the liner is 53/64" away from the mouth of the cap. Clean excess cement with cigarette lighter fluid.

Apply arabol cement (#68 - 68A) to the barrel liner and insert it into the barrel shell. Clean excess cement with water.

## AC181 SKRIPSERT PENS

### REPAIR INSTRUCTIONS

#### DISMANTLE:

1. Remove Point unit from barrel and pull off the Skrip Cartridge.
2. Place Point unit in 120 degree water for approximately 20 seconds. Shield the threads of the threaded bushing with a Plastic Thread Shield (#98). Grip the shielded threaded bushing with a Point Holder Pliers (tool #32) and unscrew the bushing from the gripping section using a rubber pad to hold and turn the gripping section. (This same Thread Shield (#98) can be used for dismantling the Lady Sheaffer and 500 and 875 Skripsert Pens.)
3. Push the point and feed back through the gripping section. Be sure to watch for the small compression gasket between feed and threaded bushing.
4. Strip the point from the feed with thumbnail or knifeblade.
5. Feed insert can be removed with the fingers. The pierce tube is removed from the threaded bushing with a Filler Tube Alignment Pliers (tool #23).

#### ASSEMBLE:

1. Push point on to feed until the side of the nib rests on the shoulder of the feed.
2. Insert feed and point into gripping section. The top of the point should be visible in the notched portion of the gripping section.
3. Wet the compression gasket with water or glycerine and place it into the gripping section. This will serve to lubricate the gasket and keep the feed from twisting when the threaded bushing is assembled. (Particularly helpful on Lady Sheaffer and other triumph point Skripsert Pens).
4. Make sure the friction ring is in place on the threaded bushing. (This ring will not interchange with Lady Sheaffer and other Skripsert Pens). Place a small amount of Thread Seal (#64-64A) on the small diameter threads and assemble into the gripping section using the pliers and thread shield to screw it in tightly. (The threaded bushing will not interchange with Lady Sheaffer or other Skripsert Pens. Can be identified with the small circle scribed around the pierce tube hole).
5. The Pierce tube and insert are assembled as described on page C11 or D8D using the brass spacer marked "sheath" for correct push length.
6. Test the writing by assembling a Skrip Cartridge on the completed assembly.

PFM PENS

REPAIR INSTRUCTIONS

DISMANTLE:

1. Remove the barrel by unscrewing it from the point unit threaded bushing.
2. Remove the sac protector assembly by pulling it out of the threaded bushing.
3. Insert threaded bushing tool-PFM (Tool #99) into the threaded bushing and unscrew the bushing from the gripping section using a rubber strip to hold the gripping section. Soaking in warm water for a few minutes will help loosen the thread seal in case normal pressure fails to loosen the joint.
4. Remove the metal seal gasket washer and the rubber point holder gasket. Remove the feed by pushing on the end of the feed finger.
5. Unscrew the plunger tube screw with a long shank screwdriver. After removing the plunger knob, push the plunger tube through the mouth of the barrel and remove the compression gasket.
6. To replace the plastic portion of the cap, disassemble the band and inner-cap by applying heat from a soldering iron to the inside of the inner cap. The cap plastic will warp from the heat, however, it will be exchanged for a new plastic shell at a nominal exchange fee. The clip spring is removed with a clip disassembling & assembly tool (Tool #16).

ASSEMBLE:

REPAIR INSTRUCTIONS

1. Replace the compression gasket in the barrel shell with a compression gasket positioning tool-PFM (Tool #100) in accordance with instructions for the use of the tool on page D3.
2. Replace the plunger tube into the barrel shell through the mouth end and push it through the compression gasket with a long shank screwdriver. Position the screw on the blade of the screwdriver and insert into and through the plunger tube. NOTE: Models AK14, AK14W, and AK15 use a 121SK screw. Models AK15WN and AK15G use a different screw to engage in the plunger knob ornament.
3. Place a plunger knob gasket on the screw and tighten the screw into the correct plunger knob. Lubricate the plunger tube with petrolatum (#95). Place the propelling spring around the plunger tube in the barrel.
4. Insert the tip of a pencil into the hole on the bottom of the feed to hold the feed in position and, with the pencil, push the feed up into the gripping section and point assembly. Be sure the feed finger is centered on the point.
5. Wet the point holder gasket and seal gasket washer with water or glycerine (#94) and place the gasket into the gripping section followed by the seal washer. Wetting will keep the feed from turning when the threaded bushing is tightened.
6. Position the friction ring into the three grooves in the gripping section with the open side of the friction ring away from the point.
7. Lubricate the end of the threaded bushing with water or glycerine (#94) and start into the gripping section. Place a small quantity of shellac (#71) on the threads and screw the threaded bushing tightly into the gripping section using a threaded bushing tool-PFM (#99). Make sure the feed finger is still centered on the point. If the point is distorted, use procedures on Pages C5, C6, and C8 to correct.
8. Place the end of the sac protector assembly containing the rubber bushing into water at least 180° F so that the water completely covers the four splines. Hold the assembly in this position for approximately two minutes to allow the rubber bushing to be heated, then remove and insert the filler tube into the sac protector assembly bushing. Dry the assembly with a cloth. Lubricate the filler tube with glycerine (#94) and insert through the hole in the point holder gasket and push out through the feed, lining up the four splines on the sac protector with the four grooves in the threaded bushing and keeping the slope on the filler tube as close in alignment with the slope on the feed as possible.
9. Assemble the barrel to the point unit applying shellac (#71) to the threads to help make the seal.
10. Retract the filler tube and, by using a filler tube alignment pliers (#23), turn, push or pull the tube so the slope is in alignment with the slope of the feed and is flush with the contour of the feed.
11. To assemble a new cap blank, position a clip spring into the clip spring assembly tool (Tool #16). Position the clip into the new blank and insert the spring through mouth of the cap into the box on the clip. Apply a small quantity of arabol cement (#58) to the inner cap and force it into the cap blank until the band seats against the plastic.

## SKRIPRITER BALLPOINT PENS

### REPAIR INSTRUCTIONS

This repair instruction covers the repair of the \$1.49, \$1.95 and \$2.49 Skripriter Ballpoint Pens introduced in 1959.

#### DISMANTLE:

1. To remove the mechanism sliding spring, make a tool by bending a small hook in a piece of wire (a paper clip will do). Place the mechanism in the depressed position. Insert the hooked tool into the mouth of the cap and, with the tool, push the mechanism shell away from the mouth. This will slide the spring out of the shell so it can be easily removed with the hooked tool. Mechanism failures can generally be corrected by replacing the sliding springs.
2. To remove the retracting mechanism, stand the cap mouth down on a smooth surface. Place the punch tool, (modified, see below\*), Tool Set #25, Tool for Removing and Assembling Ballpoint Mechanisms, Page D8, against the push rod and drive the mechanism out of the cap by tapping lightly on the punch.

\* The tool should be ground flat on two sides so it will fit into the oblong hole on top of the \$1.49 and \$1.95 models. The Service Department at the factory will grind these punches for any repair station not having the facilities to grind the flats. This service will be provided at no charge. Simply return the punch in your next parts shipment and it will be modified and returned to you.

#### ASSEMBLE:

1. The "U" shaped sliding mechanism spring should be "square". The sides of the "U" should be at right angles to the bottom and the bottom straight and not slanted or the mechanism will fail. Towards the top of the "U" the sides should slope out slightly.
2. To assemble a sliding spring into the mechanism inside the cap, insert the bottom of the spring into the mouth of a pushing tool, Tool Set #25, Tool for Assembling Ballpoint Mechanisms, Page D8, until the mouth of the tool rests on the bend in the short side of the spring. The slope on the sides of the spring should be enough so the spring holds in the mouth of the tool.
3. Hold the mechanism in the depressed position and insert the spring into the mechanism shell through the mouth of the cap. The long side will enter the shell first. A slight pressure toward the long side of the spring with the tool will compress the spring so the short side will enter the shell. Make sure the two sides of the spring are in the shell and push the spring forward into the shell. IMPORTANT: The sides of the spring must be seated in the grooves in the mechanism shell or the retracting action may fail.
4. To assemble a retracting mechanism with sliding spring, position the knurled collar down over both sides of the spring. On the \$1.49 and \$1.95 models line up the slope on the push button with the slope on the top of the cap (NOTE: The \$2.49 model takes a mechanism without slope) and drop the mechanism into the cap. Push the mechanism into place using the pushing tool from Tool Set #25.

TARGET OR IMPERIAL III PENS

REPAIR INSTRUCTIONS

DISMANTLE

1. Remove the barrel by unscrewing it from the point unit threaded bushing.
2. Remove the sac protector tube by pulling it off of the threaded bushing. The sac can then be removed from the sac trunion.
3. Grip the threaded bushing with a point holder pliers (Tool #32) and unscrew the threaded bushing from the gripping section.
4. Remove the feed insert. The feed and compression gasket can then be removed by pressing down on the end of the feed finger.
5. Unscrew the nib from the gripping section.
6. With a long shank screwdriver, unscrew the plunger tube screw and remove the plunger knob. The plunger tube can now be removed from the barrel. The barrel compression gasket can be removed with a pin or paper clip.

ASSEMBLE:

1. Using an "O" ring positioning tool - TM (Tool #15A) position the barrel compression gasket into the barrel. Insert the plunger tube down through the mouth of the barrel and reassemble the plunger knob with the long shank screwdriver.
2. Apply a small quantity of arabol cement (#68) to the point threads of the gripping section, screw the nib into place and wipe off the excess arabol.
3. Insert the tip of a pencil into the hole on the bottom of the feed to hold the feed in position and push the feed up into the gripping section and point assembly. Be sure the feed finger is centered on the point.
4. Wet the point holder gasket with water or glycerine (#94) and place the gasket into the gripping section. Wetting will keep the feed from turning when the threaded bushing is tightened into position.
5. Position the friction ring into the three grooves in the gripping section with the open side of the friction ring away from the point. Place a small quantity of arabol cement (#68) on the threads of the threaded bushing and screw it into place using the point holder pliers (Tool #32).
6. Assemble the feed insert through the threaded bushing with the fissure on the insert lined up with the slit of the nib. The flat side of the insert must be towards the top of the nib.
7. Apply a small quantity of shellac to the sac trunion on the threaded bushing and using a sac spreader (Tool #31) assemble the sac assembly. Put the sac protector tube on to the threaded bushing. Place a small quantity of DPR solution (#97) on the threaded bushing and screw the barrel into place.

## IMPERIAL TOUCHDOWN AND COMPACT PENS

### REPAIR INSTRUCTIONS

#### DISMANTLE

1. Remove the barrel by unscrewing it from the point unit threaded bushing.
2. IMPERIAL ONLY - Remove the sac protector tube by pulling it off the threaded bushing. Remove the sac from the sac trunion.
3. Grip the threaded bushing with a Point Holder Pliers (Tool #32) and unscrew the threaded bushing from the gripping section. Protect the threads on the Compact pen with a Thread Shield for Compact Pens (Tool #101).
4. Remove the feed insert. Remove the feed and compression gasket by pressing down on the end of the feed finger. On the Compact pen the pierce tube is removed from the threaded bushing with Filler Tube Alignment Pliers (Tool #23).
5. IMPERIAL ONLY - With a long shank screwdriver, unscrew the plunger tube screw and remove the plunger knob. Remove the plunger tube through the mouth of the barrel. Remove the barrel compression gasket with a pin or paper clip.

#### ASSEMBLE

1. IMPERIAL ONLY - Using an "O" Ring Positioning Tool - TM (Tool #15A) position the barrel compression gasket into the barrel. Insert the plunger tube through the mouth of the barrel. Reassemble the plunger knob with the long shank screwdriver.
2. Insert the tip of a pencil into the hole on the bottom of the feed to hold the feed in position and push the feed up into the point and gripping section. Be sure the feed is centered on the point.
3. Position the compression gasket in the gripping section tamping it down against the feed.
4. Position the friction ring into the three grooves in the gripping section with the open side of the friction ring away from the point. Place a small quantity of Arabol Cement (#68) (Imperial) or Thread Seal (#64) (Compact) on the forward threads of the threaded bushing and screw it into place using a Point Holder Pliers (Tool #32). Again, protect the threads on the Compact pen with a Thread Shield for Compact Pens (Tool #101).
5. COMPACT ONLY - Pierce tube is assembled as described on Page D8D using the brass spacer marked Sheath for correct push length.
6. Assemble the feed insert through the threaded bushing (through the pierce=~~tube~~ on the Compact) with the fissure on the insert lined up with the slit on the point. The flat side of the insert must be towards the top of the point. On the Imperial the insert should extend at least 1/64" from the face of the threaded bushing. On the Compact the insert must be pushed so that the end is shorter than the long side of the pierce tube but longer than the short side of the pierce tube. Make sure the long end of the pierce tube is sharp. If necessary sharpen it with a fine tooth file.
7. IMPERIAL ONLY - Apply a small quantity of Shellac (#71) to the sac trunion on the threaded bushing and using a Sac Spreader (Tool #31) assemble the sac. Push the sac protector tube over the sac on to the threaded bushing. Place a small quantity of DPR solution (#97) on the threads of the threaded bushing and screw the barrel into place.

## REMINDER CLIP BALLPOINT

### REPAIR INSTRUCTIONS

#### DISMANTLE

1. PLASTIC CAP - Insert the threaded end of a Retainer Sleeve Disassembling Tool (Tool #102) into the cap. Applying pressure, turn clockwise until the thread passes through the shoulder on the retainer sleeve with a definite snap. Pull the sleeve out with the tool. Remove the cam.

METAL CAP - Screw a barrel into the cap and remove the retainer sleeve by pulling while rocking the barrel thus "walking" the sleeve out. Remove the cam.

2. PLASTIC CAP - Through the cap mouth, with the hook of a Clip Spring Disassembling Tool (Tool #103) turned away from the clip, insert between the clip and spring until the hook slips behind the raised portion of the spring. Pull the spring out freeing the clip.

METAL CAP - Through the cap mouth, with the hook turned towards the clip, insert under the spring and engage the raised portion of the spring. Pull the spring out freeing the clip.

#### ASSEMBLE

1. PLASTIC CAP - The plastic cap spring is turned back over on top forming a raised portion. With this raised portion up, place the spring into the groove on a Clip Spring Assembling Tool (Tool #103). The movable band is not used and should be positioned at the handle. Hold the spring in position and slide into the cap off to one side of the clip holes. When the spring is beyond the first hole, rotate the tool until the spring is in line with the holes. Place the clip in position. Push the tool forward until the spring clicks into place.

LARGE METAL CAP - The sides of the metal cap spring are turned under forming a raised portion. Place the spring in the groove with the raised portion down. Hold in place with the movable band placed over the rolled under portion. Slide into the cap off to one side of the clip holes. When the spring is beyond the first hole, rotate the tool until the spring is in line with the holes. Place the clip in position. Bear down on the handle so the spring is rocked up towards the clip. Push forward until the spring clicks into place.

SMALL METAL CAP - Use same procedure as for plastic caps except spring for metal cap is used and the movable band positioned at the handle.

2. Hold the cap mouth up. Select the proper diameter cam, line up the sloped groove with the clip and drop the cam into place.
3. PLASTIC CAP - Place the retainer sleeve on the arbor end of the Retainer Sleeve Assembling Tool (Tool #102) and push into the cap until the mouth rests on the tool.

METAL CAP - Screw the retainer sleeve on a barrel and push into the cap until the end of the sleeve is flush with the cap mouth.



## DIAMOND SHAPED POINTS - (ENCLOSED FEED)

### Repair Instructions

#### CARTRIDGE TYPE

General dismantling and reassembling instructions for cartridge type pens are to be followed as in C11, C12, and C13. However, enclosed feed, diamond shaped points require additional attention in servicing.

Proceed with normal dismantling, removing threaded bushing, insert, gripping section, compression gasket, and friction ring. The gripping section with point and feed remain for further dismantling. The trick now is to get the feed out of the gripping section.

1. Obtain a 2-56-NC tap. A large hardware store or automotive supply shop would have one in stock. In a pinch you might use Servisette Tool #28. The tap will work better because the threads are finer. Turn the tap or puller (#28) into the center hole of the feed about two or two and one-half turns then pull straight out. Don't twist or turn, just pull straight out. The feed is like a square peg going into a square hole and there is purposely some tension or snugness built into the fit so the point will be held securely. (See special note #1)
2. Wiggle the point a little and tilt it up and down. It will come out of the gripping section easily. This completes dismantling. The parts can now be cleaned or replaced as required. (See special note #2)

#### Assemble

1. Note the small lug or key on the top side of the point near the heel. This key must fit into and behind a mating keyway formed on the inside wall of the gripping section. Insert the shank of the point into the gripping section on the diamond inlay end and maneuver it with slight upward pressure until the point shoulders rest against the gripping section and the lug has come into contact with the keyway.
2. Hold the point in this position for feed assembly. Note the feed finger is rectangular in shape, having a pronounced sharp shoulder at the junction of the finger and comb cut area. This shoulder must touch and rest upon a mating shoulder formed on the inside wall of the gripping section. Push the feed straight into the gripping section. Some slight resistance will be noted so it will be necessary to use a small rod or tool or the shank end of the tap to push the feed into final position against the shoulder stop. The feed finger will now hold the point in its correct location and position.
3. Re-assemble gripping section gasket, friction ring, and threaded bushing in the normal manner. (Manual page C11)
4. Replace insert and adjust pierce tube properly. (Manual page C11)
5. Always test for writing and feeding by assembling a Sheaffer cartridge on the completed assembly.

DIAMOND SHAPED POINTS - ENCLOSED FEED)

TOUCHDOWN

The above instructions relate also to the Touchdown filling models having the enclosed feed, diamond shaped inlay writing units after the writing units have been removed from the barrel assembly and the sac removed from the gripping section.

Special notes

- \* 1. Either the Eraser Puller Tool #28 or the 2-56-NC Tap will cut into the hole of the feed creating some hard rubber shavings. Do not thread either tool into the feed hole any farther than is necessary to pull feed out. Be sure to remove any burrs or shavings from the feed hole by an air blast or several sharp taps on a hard surface.
- \* 2 While point writing units are completely dismantled it is essential to thoroughly and completely clean the feed, inside of gripping section, insert and point of all writing fluid sediment and accumulation prior to re-assembly.